

**Notice of Allowability**

Application No.

09/544,142

Applicant(s)

TSILEVICH, MAOZ BETZER

Examiner

Joseph D. Anthony

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE filed 08/18/2004.
2. ☒ The allowed claim(s) is/are 13-15, 17-25 [renumbered as 1-3, 10-12, 4-9].
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☒ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date 12/04/03.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                     | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other _____   |



### Reasons For Allowance

1. The following is an examiner's statement of reasons for allowance: This office action is in response to the RCE filed 08/18/04 which was filed after the 2<sup>nd</sup> Notice of Allowability was mailed on 05/19/2004. The RCE filed 01/20/2004 was filed after the 1st Notice of Allowability was mailed on 12/04/2003. Applicant present RCE, like the first RCE was accompanied with an attached IDS. The examiner wants to incorporate by reference the "reasons for allowance" as set forth in Notice of Allowability mailed 12/04/03. The examiner also wants to incorporate by reference the "reasons for allowance" as set forth in Notice of Allowability mailed 05/19/2004.

The IDS filed 08/18/05 filed with the RCE list only one reference which is Israel Patent Document Number 73138 which is drawn to reversible phase change compositions for storing thermal energy. The discloses process of making the compositions comprise adding and mixing at least one cationic surfactant thickener, optionally dissolved in a solvent, with solid hydrated salts to form a thick uniform gelled phase change material composition, see page 16, lines 14-24 and Examples 1-3. The method also allows for heating the mixture of cationic surfactant and solid hydrate salts to improve the process of forming the gelled micelle structure in the resulting phase change material compositions, see Examples 4-7. It should be noted that there is no disclosure that the temperature of this heating step is high enough wherein the hydrate salts themselves are liquefied. Example 7 also discloses a step wherein an inorganic nucleation agent (e.g. BaO) is added and mixed into the heated mixture of cationic surfactant

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thickener and solid hydrated salts followed by cooling. The cationic thickening agent is present in an amount in the hydrated salt to form a micelle structure throughout the hydrate salt to prevent segregation of the hydrate salts during repeated freezing and thawing cycles, see abstract, page 8, pages 13-17 and claim 8.

Applicant's claimed method of making is patentable distinct from the method of making as set forth in Israel Patent Document Number 73138 in a number of fundamental ways. The most significant being that there is no disclosure or suggestion of any kind in the Israel document, to add a cationic surfactant thickener, which reads on applicant's organic filler, to a hydrate salt which has previous been liquefied by heating. **The said distinction is deemed to be a critical distinction between applicant's claimed process and the process of the prior-art for it leads to a final product that displays a fundamental distinct physical/chemical structure. Applicant's process is directed towards an endothermic heat shield composition, see the preamble of independent claim 13. The preamble is deemed to breath life and meaning to the product that results form the claimed process.**

Applicant's process results in a composition wherein the hydrate salt particles are fused to each other, see page 11, lines 2-18 of applicant's specification. The function of the organic and inorganic filler materials in applicant's endothermic heat shield composition, which results from the

claimed method, is to assist the composition in retaining its solidified state and not reverting back to the liquid state it possessed during preparation when it is used as a heat shield, see page 8, lines 12-16 of applicant's specification. **This is the exact opposite of what must occur** to the compositions that are produced by the Israel document since they are used in a reversible phase change process for storing thermal energy that requires the compositions to repeatedly undergo freezing and thawing cycles when exposed to large temperature changes. Applicant's representative has made the same general point in regards to the actual nature of applicant's heat shield composition, that results from the specifically claimed method of making, as compared to the reversible heat storing compositions that are made by a different process as disclosed in previously applied U.S. Patent Number 4,288,338 to Phillips, see pages 11-12 of applicant's amendment filed 11/06/2003.

Examiner newly cited U.S. Patent Number 4,209,413 to Kent et al. was disclosed by Israel Patent Document Number 73138 on page 7, lines 1-15. The Israel document describes a method of how Kent et al's thermal energy storage material are produced that has no basis in fact when the actual Kent et al patent is looked at. Rather Kent et al teach a thermal energy storage material comprising at least one hydrated inorganic salt having a transition

temperature to the anhydrous or a less hydrated form in the range 10.degree. to 100.degree. C. (for example, sodium sulphate decahydrate), the salt being dispersed and suspended in a water-insoluble hydrogel formed from a water-soluble synthetic polymer having pendant carboxylic or sulphonic acid groups cross-linked with cations of a polyvalent metal (for example, aluminium or magnesium). There is thus absolutely no disclosure of any kind within Kent et al. to the Israel document's assertion that: "The [Kent et al's] synthetic polymers are dispersed in the melted salt hydrate and then reacted further in solution with cross linking agent forming giant molecules". Kent in fact has no teaching of melting the salt hydrate before adding the organic polymer and inorganic cross-linking agent. The melting of the hydrate salt only occurs during the process of use of the energy storage material, not during its manufacture, see column 3, lines 48-61.

Rather Kent et al's energy storage material is very much like Israel Patent Document Number 73138 energy storage material, in that it must undergo reversible phase change freezing and thawing cycles when exposed to large temperature changes in order to store and release energy. This is the exact opposite of what occurs to applicant's heat shield compositions that are produced by applicant's claimed process for these heat shield compositions do

not revert back to a liquid state when exposure to heat but maintain their solidified state.

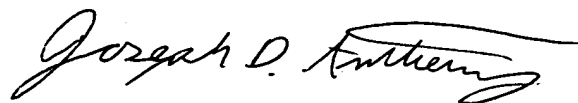
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Prior-Art Cited But Not Applied***

2. Any prior-art reference which is cited on FORM PTO-892 but not applied, is cited only to show the general state of the prior-art at the time of applicant's invention.

***Examiner Information***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Joseph D. Anthony whose telephone number is (571) 272-1117. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (571) 272-1119. The centralized FAX machine number is (703) 872-9306. All other papers received by FAX will be treated as Official communications and cannot be immediately handled by the Examiner.



**Joseph D. Anthony**  
**Primary Patent Examiner**  
**Art Unit 1714**

5/6/05